REMARKS

All claims are rejected under 35 U.S.C. 102 in view of Dumoulin.

Claim 1 has been amended to more clearly point out the distinction from Dumoulin. Thus it is now made clear that the first and second coil elements are separate and spaced so that the front edge of one is spaced from and separate from the rear edge of the other at the line therebetween. Thus the word "junction" has been removed which may have implied that the coil elements are connected at this transverse line. The words "of the sample to be tested" have been removed to avoid any suggestion that the "longitudinal direction" is in a particular direction of the system, since the terms 'longitudinal" and "transverse" are used to merely define imaginary directions in the system for purposes of defining the relationship between the coil elements.

The Dumoulin patent is describing the use of a saddle trains with either two, three or four loops, which are arranged INSIDE a single loop or "predetermined area".

Thus looking at Figure 2 which sets out the coil configuration, there is an outer single coil 58, a two part second coil 62 and a three part third coil 66. If these coils are overlaid in accordance with the teaching of Dumoulin, the coil 62 forms two parts which are connected at a transverse center line.

Over these is laid the third coil 66 which defines three connected coil sections.

In the present invention the construction is different in that the first and second coil elements are separate from each other at the transverse line. That is there is no direct electrical connection allowing current to flow directly (although there may be mutual inductance.) (This was believed to be present in the Claim 1 as previously submitted but has now been made more clear. )

In Dumoulin, components corresponding to the first and second coil elements are provided by the parts 64 of the second coil 62. These coil elements are connected at the

transverse line.

Because the construction is different, the coil constructions operate in an entirely different manner for an entirely different purpose.  Thus Dumoulin provides the overlaid coil elements 58, 62, 66 and 79 for the purpose of allowing them to combine data from separate saddle trains to create a image from only one of the four sub-regions A, B, C and D.  The key is that the saddle trains 62, 66 and 70 each with its number of loops greater than 1, overlay inside of the single loop 58.

In the present invention, a "saddle train" of three loops, defined by the third coil element, with the center loop (first coil section) optimized for SNR, and the other two loops (the second and third coil sections) used for decoupling, is placed across the transverse line between two separate loops (first and second coil elements) in a traditional loop array. The first and second coil elements are preferably "underlapped" or gapped but this is not necessarily so since the edges may be coincident or they may beoverlapped.  This three lobe saddle train, thus in effect, sits in the gap, where it is used for SNR improvement and better g-factor of the signals detected by the coil array.  It is not used, as in Dumoulin, for focusing the data from a part only of the array.

It is submitted therefore that Claim 1, and the remaining claims dependent thereon, are allowable.

Respectfully submitted

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